DICHANTHELIUM SCOPARIUM AND *MUHLENBERGIA GLABRIFLORIS*: NEW TO THE FLORA OF OHIO

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ABSTRACT

Two native grasses are reported new to Ohio's flora. *Dichanthelium scoparium* (Lam.) Gould and *Muhlenbergia glabrifloris* Scribn. Both species share a similar coastal plain and Mississippi embayment distribution pattern. They were found at localities less than 4.5 km apart and in an area known for southern species reaching their northern limit

RESUMEN

Dos gramíneas nativas se citan como nuevas para la flora de Ohio. *Dichanthelium scoparium* (Lam.) Gould and *Muhlenbergia glabrifloris* Scribn. Ambas especies comparten un patrón de distribución en una llanura costera y desembocadura del Mississippi. Se encontraron en localidades a menos de 4.5 km y en un área conocida de especies meridionales que alcanzan allí su límite norte.

In 2001, Minney collected ***Dichanthelium scoparium***, velvet panic grass (Syn. *Panicum scoparium* Lam.) in Jackson County, Ohio, a species previously not reported for Ohio (Cooperrider et al. 2001; Flora of North America Committee (FNA) 1993). The authors revisited the site in 2002 to collect ecological data and additional voucher specimens. *Dichanthelium scoparium* is a distinctive, large, and easily identified species in a genus notorious for confounding botanists. Flowering culms can be up to 1.3 m in height (Fernald 1950), and are covered with soft, long-spreading hairs with the exception of a glabrous, viscid band below each node.

Distribution of this grass follows a coastal plain and Mississippi embayment pattern (Fig. 1). It ranges from Massachusetts south primarily along the coastal plain to Florida, west along the Gulf Coast to Texas, and north in the interior, primarily in the Mississippi River Valley and its tributaries to southeastern Kansas, southern Illinois, and Kentucky. Habitats for this species are variously reported as "wet soil" (Gleason & Cronquist 1991), "ditches and low woods" (Radford et. al 1968), "damp thickets, swales and shores" (Fernald 1950), "seepage bogs associated with the longleaf pine system" ([Alabama] Al Schotz, pers.

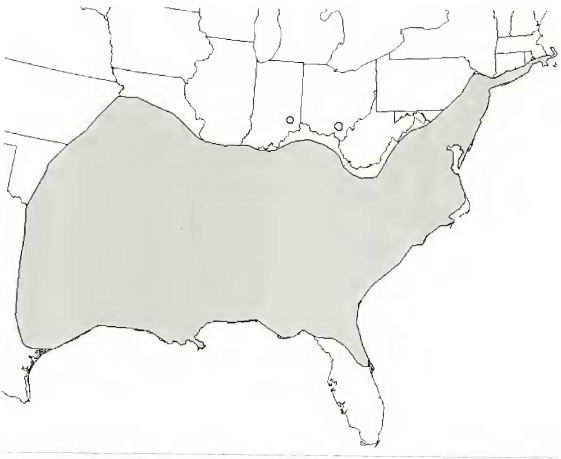

Fig. 1. Map showing the North American distribution of *Dichanthelium scoparium* adapted from Flora of North America Committee (1993).

comm. 2003), and "bottomland and upland prairies, sand prairies, ledges of bluffs, glades, margins of sinkhole ponds, fens, and openings of mesic upland forests, usually on acidic and especially sandy substrates; also roadsides, railroads, and fallow fields (Yatskievych 1999)." The wetland indicator status, as assigned by the U.S. Fish & Wildlife Service (Reed 1988) for the eastern U.S. is FACW (Facultative Wet), meaning that the plant usually occurs in wetlands (estimated probability 67%-99%), but is occasionally found in non-wetlands.

The Ohio population occurs on permanently saturated soil associated with a seepage outflow, and *Dichanthelium scoparium* largely defines the limits of the moist soils. It has formed a dense colony, nearly excluding other plants in some areas of the seepage meadow. While this site is in the right-of-way for a highway, we don't consider it introduced to this site, either intentionally as part of roadside plantings, or unintentionally by passing traffic or some other factor associated with the roadway. Of course, the spread of plants into new regions via roadways is a well-documented phenomenon (Reznicek & Catling 1987). The genera *Dichanthelium* and *Panicum* in Ohio are not known for non-natives, though. In the most recent listing of Ohio flora (Cooperrider et. al 2001),

there are 36 species listed for these genera, and only one is not indigenous, *Panicum miliaceum* L. However, *P. miliaceum*, or millet, does not persist in the wild in Ohio, and is most often seen coming up around bird feeders where the seed has fallen to the ground. It should be noted that *Dichanthelium scoparium* is reported in Michigan by the USDA PLANTS Database, but there is no known specimen from Michigan and the report may be based on a synonymy error ([Michigan] Reznicek, pers. comm. 2003). And it was not discovered at another northernmost point in its range—southern Illinois—until 1967 (Mohlenbrock 1973), although it is considered native there. The species was discovered in southwestern Indiana in 1982 ([Indiana] Homoya, pers. comm. 2003) and again in 1998 in southeastern Indiana (Hedge et al. 1999). Another panic grass, *Panicum verrucosum* Muhl., which has a similar coastal plain distribution, is found in southern Ohio in Adams, Athens and Pike counties. It grows in adjacent Pike County on roadside banks along the Appalachian Highway. This species is currently listed as threatened in Ohio (Ohio Division of Natural Areas & Preserves 2002).

Although the *Dichanthelium scoparium* site is along a highway, the floristic composition is similar to parts of The Nature Conservancy's (TNC) Glade Wetland Preserve, which is a mosaic of low, poorly drained wetlands interspersed with higher knolls that support upland species. The preserve is about 4 km east of the *D. scoparium* site (Fig. 2). Plant taxa occurring at both sites include *Agalinis purpurea* (L.) Pennell, *Asclepias hirtella* (Pennell) Woodson, *Asclepias incarnata* L., *Carex annectens* Bickn. var. *xanthocarpa* (Bickn.) Wieg., *Carex complanata* Torr. & Hook., *Carex scoparia* Schk., *Eleocharis tenuis* (Willd.) Schultes var. *verrucosa* (Svenson) Svenson, *Juncus anthelatus* (Wiegand) R.E. Brooks, *Juncus biflorus* Elliott, *Juncus brachycarpus* Engelm., *Lysimachia quadriflora* Sims, *Panicum anceps* Michx., *Panicum microcarpon* Muhl., *Pycnanthemum tenuifolium* Schrader, *Rhynchospora capitellata* (Michx.) Vahl, *Sabatia angularis* (L.) Pursh, *Scutellaria integrifolia* L., and *Sorghastrum nutans* (L.) Nash. Another significant species at the *D. scoparium* site that is not at Glade Wetland Preserve is the state endangered *Scleria pauciflora* Muhl. ex Willd.

Voucher specimens: **OHIO. Jackson Co.**: dominant in 15 m × 10 m patch; scattered mostly in ditch for about 150 m along highway; seepage zone, open grassland, N and adjacent to Appalachian Highway (St. Rt. 32); 2.5 mi E of the Pike/Jackson County line, 5 Jul 2001, *Minney s.n.* (MICH); one large colony, covering several dozen square feet, in prairie-like opening on road bank, along seepage outflow, N side of OH Rt. 32, just E of jct. with C-23, sect. 8, Beaver Quad; Scioto Twp., 16 Jul 2002, *McCormac 7,296, Minney & Gardner* (CLM, KE, MICH, MU, OS).

In 2002, Minney collected ***Muhlenbergia glabrifloris*** Scribn. (clay-pan muhly), another species not reported for Ohio (Cooperrider et al. 2001; FNA 1993). In Gleason and Cronquist (1991) and Fernald (1950) the specific epithet is spelled *M. glabriflora* but we follow Scribner's original spelling, *M. glabrifloris* (FNA 2003). This species has a similar distribution as *D. scoparium*, however, it is un-

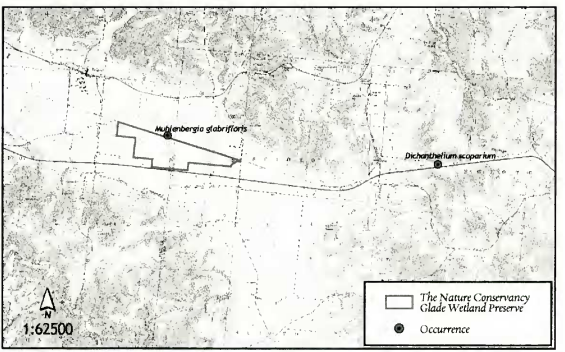

FIG. 2. Map showing the locations of *Dichanthelium scoparium* and *Muhlenbergia glabrifloris* in proximity to each other and The Nature Conservancy's Glade Wetland Preserve, Pike County, Ohio.

common throughout most of its range and is listed as rare in 7 states (NatureServe 2003). It ranges from the coastal plain of Virginia and North Carolina, and from Alabama to eastern Texas north to Missouri, southern Illinois, southwestern Indiana and western Kentucky (Fig. 3). The Ohio site is disjunct, as the closest locales are in Indiana and Kentucky, about 500 km away.

Muhlenbergia glabrifloris has well-developed rhizomes and flowering culms up to 1 m long with multiple lateral panicles. It strongly resembles a common muhly in Ohio's flora, *Muhlenbergia frondosa* (Poir.) Fern., however, the lemma is completely glabrous compared to the bearded lemma of *M. frondosa*. Habitats range from "bottomland forests, mesic upland forests, bottomland and upland prairies, and margins of glades; also railroads" in Missouri (Yatskievitch 1999) and "moist woodlands" in Illinois (Mohlenbrock 1973). Gleason and Cronquist (1991) list its habitat as "mostly in shade on low ground in heavy clay." The Ohio population is located just north of TNC's Glade Wetland Preserve (Fig. 2). The population is located on clay soils in a pin oak flatwoods (Fig. 4), a habitat similar to sites reported from other parts of its range.

Voucher specimen. **OHIO. Pike Co.:** pin oak–swamp white oak forest in clay soils of the pre-glacial Teays River Valley; woodlot about 5 acres in size; 0.5 mi N of the intersection of the Appalachian Highway (Rt. 32) and the Pike-Jackson County Line, 1 Oct 2002, *Minney s.n.* (OS).

The region where these two species were discovered is noted for unusual plant communities that support many rare species, including southern flora at the northern limits of their ranges (Beatley 1959; Spooner 1982). Some examples of

FIG. 3. Map showing the North American distribution of *Muhlenbergia glabrifloris* adapted from Flora of North America Committee (1993).

southern plants that are within 5 km of the Glade Wetland Preserve are *Gratiola viscidula* Pennell, *Magnolia macrophylla* Michx., *Panicum laxiflorum* Lam., *Polygala curtissii* A. Gray, and *Triadenum walteri* (S.G. Gmelin) Gleason. As the Ohio populations of *Dichanthelium scoparium* and *Muhlenbergia glabrifloris* occur in appropriate habitat in native plant communities, and their distribution mirrors that of other similarly distributed southern species, we consider both as native to Ohio. These species likely migrated into southern Ohio via the same route from the Mississippi River Valley into the Ohio River Valley. Similar habitats will be explored in the region for additional localities of these two species.

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Fig. 4. *Muhlenbergia glabriflaris* was found in this pin oak flatwoods located adjacent to The Nature Conservancy's Glade Wetland Preserve, Pike County, Ohio (Photograph by Gary McFadden).

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